



U.S. Department  
of Transportation  
**Research and  
Special Programs  
Administration**

FEB 29 1996

400 Seventh Street S.W.  
Washington D.C. 20590

DOT-E 11539

EXPIRATION DATE: [January 31, 1998]

(FOR RENEWAL, SEE 49 CFR SECTION 107.105)

1. **GRANTEE:** C-CAM International L.L.C.  
Sand Springs, Oklahoma
2. **PURPOSE AND LIMITATION:** This exemption authorizes the manufacture, marking and sale of certain non-DOT specification IMO Type 5 portable tanks to be used for the transportation in commerce of Division 2.1, 2.2 and 2.3 materials. This exemption provides no relief from any regulation other than as specifically stated herein.
3. **REGULATORY SYSTEM AFFECTED:** 49 CFR Parts 106, 107 and 171-180.
4. **REGULATIONS FROM WHICH EXEMPTED:** 49 CFR Sections 173.315(a) in that non-DOT specification packaging is authorized, and 178.245-1(b).
5. **BASIS:** This exemption is based on the application of C-CAM International L.L.C. dated August 29, 1995, and supplemental information dated December 20, 1995 and January 23, 1996, submitted in accordance with 49 CFR 107.103 and the public proceeding thereon.
6. **HAZARDOUS MATERIALS (49 CFR 172.101):**

Hazardous materials description/ proper shipping name	Hazard Class/ Division	I.D. Number
Ammonia, anhydrous	2.2 Hazard Zone D	UN1005
Butadienes, inhibited	2.1	UN1010
Butane	2.1	UN1011
Butylene	2.1	UN1012
Chlorodifluoromethane, R22	2.2	UN1018

Hazardous materials description/ proper shipping name	Hazard Class/ Division	I.D. Number
Chloropentafluoroethane, R115	2.2	UN1020
Chlorotetrafluoroethane, R124	2.2	UN1021
Cyclopropane, liquefied	2.1	UN1027
Dichlorodifluoromethane, R12	2.2	UN1028
Dichloromonofluoromethane, R21	2.2	UN1029
Difluoroethane, R152a	2.1	UN1030
Dimethylamine, anhydrous	2.1	UN1032
Dimethyl ether	2.1	UN1033
Ethylamine	2.1	UN1036
Ethylchloride	2.1	UN1037
Isobutylene	2.1	UN1055
Methylamine, anhydrous	2.1	UN1061
Methyl bromide	2.3 Hazard Zone C	UN1062
Methylchloride	2.1	UN1063
Liquefied petroleum gas; butane; butadiene; propane, inhibited; classed as flammable gases	2.1	UN1075
Propylene	2.1	UN1077
Trichlorotrifluoroethane, R113 Refrigerant gas, n.o.s.	2.2	UN1078
Sulfur dioxide, liquefied	2.3 Hazard Zone C	UN1079
Trifluorochloroethylene, R1113	2.3 Hazard Zone C	UN1082
Trimethylamine, anhydrous	2.1	UN1083
Vinyl bromide	2.1	UN1085
Vinylchloride	2.1	UN1086
Vinyl methyl ether, inhibited	2.1	UN1087
Hexafluoropropylene, R1216	2.2	UN1858
Trifluoroethene, R143a	2.2	UN1956
Dichlorotetrafluoroethane, R114	2.2	UN1958
Isobutane	2.1	UN1969
Chlorodifluoromethane and Chloropentafluoroethane mixture, R502	2.2	UN1973

Hazardous materials description/ proper shipping name	Hazard Class/ Division	I.D. Number
Chlorodifluorobromomethane, R12B1	2.2	UN1974
Octafluorocyclobutane, RC318	2.2	UN1976
Propane	2.1	UN1978
Chlorotrifluoroethane, R133a	2.2	UN1983
Trifluoromethane	2.2	UN1984
Trifluoroethane, compressed, R143	2.1	UN2035
Octafluoropropane, R218	2.2	UN2424
Chlorodifluoroethane, R142	2.1	UN2517
Dichlorodifluoromethane and difluoroethane azeotropic mixture, R500	2.2	UN2602
Tetrafluoroethane, R134a	2.2	UN3159
Liquefied gas, NOS	2.2	UN3163
Pentafluoroethane, R125	2.2	UN3220
Difluoromethane	2.1	UN3252
Heptafluoropropane	2.2	UN3296
Trichlorofluoromethane, R11	2.2	NA9188

7. PACKAGINGS and SAFETY CONTROL MEASURES:

a. PACKAGING - Packagings authorized are three designs of non-DOT specification steel portable tanks that meet all requirements of DOT Specification 51, including the ASME "U" stamp, except that the fill and discharge openings are located on the bottom or side of the tank, with the manway and pressure relief valve separately positioned and not grouped with the fill and discharge valves. The center point of the fill and discharge valve group of each tank is located at the bottom or side of the tank, inside a steel protective housing, which is further protected by an ISO frame. Each portable tank must be constructed in accordance with C-CAM Drawings GLP2438.1-GA, GA-153, and GA-198, specifications and calculations on file with the Office of Hazardous Materials Exemptions and Approvals and in compliance with the following provisions:

- (i) **Code** - Portable tanks must comply with DOT Specification 51 in all respects except that the fill and discharge openings may be located on the bottom or side of the tank and the manway may be positioned separately and not grouped with the valves.

(ii) **Material** - SA612-N carbon steel.

(iii) **Tank Dimensions (inches) and Design Criteria -**

Tank Design	Water Capacity Gallons	Outside Diameter Inches	Length Inches	Shell Thickness Inches	Head Thickness Inches
GLP2438	6440	94.5	238	0.75	0.875
GGR1722	4550	84.0	212	0.75	0.875
GCGR1500	4150	81.0	224	1.00	1.00

(iv) **Pressure and Venting Data -**

Tank Design	Design Pressure (Note 1) (psig)	Test Pressure (psig)	Surface Area (Sq Ft)	PRV Setting (psi)	Total Relief Capacity (Note 2) (SCFH)
GLP2438	319	479	518	319	1,416,744
GGR1722	355	503	409	355	1,570,644
GCGR1500	500	750	324	500	2,190,780

**Notes:** (1) Design pressure means "Maximum Allowable Working Pressure" as used in the ASME Code.

(2) The venting capacity requirement for each material must be determined by the flow formulas contained in the Compressed Gas Association (CGA) Pamphlet S-1.2. For each tank design, two 3-inch diameter spring loaded safety relief valves, outboard and in series with a rupture disc set at design pressure, are provided.

(v) **Design Weights -**

Tank Design	Design Specific Gravity	Maximum Gross Weight (Pounds)	Maximum Commodity Weight (Pounds)	Tare Weight (Pounds)	Design Temperature Range
GLP2438	1.00	67,200	43,900	23,300	-22°F to 200°F
GGR1722	1.58	67,200	49,546	17,654	-40°F to 200°F
GCGR1500	1.40	67,200	45,800	21,400	-40°F to 200°F

- (vi) Weld Joint Efficiency - 1.0
- (vii) Corrosion Allowance - 0.0
- (viii) G-Loadings - Vertical down - 2    Vertical up - 2  
Longitudinal - 2    Transverse - 2
- (ix) Openings - The following openings are provided:

Tank Design	Manway	Pressure Relief	Liquid Port (Bottom)	Vapor Port (Bottom)
GLP2438	18 inch	Two 3"	One 2"	One 1½"
GGR1722	18 inch	One 3"	One 2"	One 1½"
GCGR1500	18 inch	Two 3"	One 3"	One 3"

**Note:** Each bottom outlet valve must be provided with a shear section that meets the requirements of 49 CFR 178.337-12.

- (x) **Insulation** - Tanks may be provided with a sunshield (optional). Additionally, tanks transporting Division 2.3 materials are insulated with 4 inches of fiberglass covered with a 22 gauge carbon or stainless steel jacketed in conformance with 49 CFR 172.102 Special Provision B14.
- (xi) **Baffles** - Optional.
- b. **TESTING** - Each tank must be tested as required for DOT Specification 51 portable tanks in 49 CFR 178.245. Each tank must be inspected and retested once every five years in accordance with 49 CFR 173.32(e) as prescribed for DOT Specification 51 portable tanks.
- c. **OPERATIONAL CONTROLS** - The vapor pressure (psig) of the lading at 115°F must not exceed the design pressure of the portable tank.

8. SPECIAL PROVISIONS:

a. Offerors for transportation of the hazardous materials specified in this exemption may use the packaging described in this exemption for the transportation of such hazardous materials provided no modifications or changes are made to the packages, all terms of this exemption are complied with, and a copy of the current exemption is maintained at each facility from which such offering occurs.

b. Each packaging manufactured under the authority of this exemption must be either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Exemptions and Approvals Program for a specific manufacturing facility.

c. A copy of this exemption, in its current status, must be maintained at each manufacturing facility at which this packaging is manufactured and must be made available to a Department of Transportation (DOT) representative upon request.

d. Shippers using the packaging covered by this exemption must comply with all provisions of this exemption, and all other applicable requirements contained in 49 CFR Parts 171-180.

e. A test report documenting a satisfactory ISO prototype test for each tank design must be on file with OHMEA prior to the first shipment.

f. Hydrostatic test certificates for each tank must be maintained by the owner and made available upon request to any representative of the DOT.

g. The tank must be filled by weight in accordance with the provisions of 49 CFR 173.315.

h. Each tank must be visually inspected prior to shipment to ensure that it has not been damaged during loading.

i. MARKING -

(i) Each portable tank must be plainly marked on both sides near the middle, in letters and numerals at least two inches high on a contrasting background, "DOT-E 11539." Additionally, "DOT-E 11539" must be stamped on the manufacturer's data plate on the line which reads "U.S. DOT Specification No."

(ii) Tanks containing materials poisonous by inhalation must be marked on two sides "Inhalation Hazard" as required by 49 CFR 172.313.

(iii) Each pressure relief valve must be marked with its set pressure and flow rate in SCFH.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, and cargo vessel.

10. MODAL REQUIREMENTS:

a. A copy of this exemption must be carried aboard each cargo vessel or motor vehicle used to transport packages covered by this exemption.

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b. Rear end protection for the motor vehicle must meet the requirements of 49 CFR 178.338-10(c) and 49 CFR 393.86.

c. Each portable tank must be secured to the motor vehicle in conformance with the requirements of 49 CFR 393.100 through 393.106.

d. Portable tanks may not be transported in container-on-flat car (COFC) or trailer-on-flat car (TOFC) service except under conditions approved by the Associate Administrator for Safety, Federal Railroad Administration.

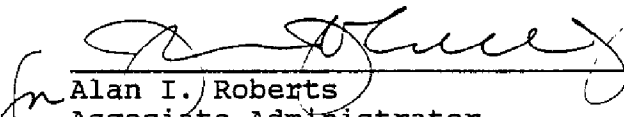
11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this exemption and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. Section 5101 et seq:

- o All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
- o Registration required by 49 CFR 107.601 et seq., when applicable.

No person may use or apply this exemption, including display of its number, when the exemption has expired or is otherwise no longer in effect.

12. REPORTING REQUIREMENTS: The carrier is required to report any incident involving loss of packaging contents or packaging failure to the Associate Administrator for Hazardous Materials Safety (AAHMS) as soon as practicable. (49 CFR 171.15 and 171.16 apply to any activity undertaken under the authority of this exemption.) In addition, the holder(s) of this exemption must inform the AAHMS, in writing, of any incidents involving the package and shipments made under the terms of this exemption.

Issued at Washington, D.C.:

  
Alan I. Roberts  
Associate Administrator  
for Hazardous Materials Safety

2/29/96  
(DATE)

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Research and Special Programs Administration, Department of Transportation, Washington, D.C. 20590.  
Attention: DHM-31.

The original of this exemption is on file at the above office. Photo reproductions and legible reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

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